

## WHAT IS CLAIMED IS

[1] A claw pole motor stator, comprising  $2m$  sets of teeth and  $2m-1$  of slots disposed alternately in an axial direction ( $m$  being a natural number of 2 or more), return passes interconnecting the teeth, and windings accommodated in the slots, respectively, the windings each accommodated in the slots spaced apart by  $m$  from each other being connected in line, so that exciting directions are opposite from each other, and the phases of magnetic fluxes passed through the teeth being displaced by  $360^\circ/N$  ( $N = 2m$ ) from one another.

[2] A claw pole motor stator, comprising  $2m+1$  sets of teeth and  $2m$  slots disposed alternately in an axial direction ( $m$  being a natural number of 2 or more), return passes interconnecting the teeth, and windings accommodated in the slots, respectively, the windings each accommodated in the slots spaced apart by  $m$  from each other being connected in line, so that exciting directions are opposite from each other, the phases of magnetic fluxes passed through the teeth being displaced by  $360^\circ/N$  ( $N = 2m$ ) from one another, and magnetic fluxes passed through first one of the teeth and  $2m+1$ -th one of the teeth being  $2/1$  of those passed through the other teeth at the same phase.

[3] A claw pole motor stator according to claim 1 or 2, wherein when  $N = 2Km$ , wherein  $K$  is a natural number of 2 or more,  $K$  windings disposed continuously are connected in line.

[4] A claw pole motor stator according to claim 1 or 2, wherein

said teeth have projections displaced in phase by  $360^\circ/N$  from one another.

[5] A claw pole motor stator according to claim 4, wherein said projections extend axially along an outer peripheral surface  
5 of a rotor.

[6] A claw pole motor stator according to claim 1 or 2, wherein said teeth have projections of the same phase relative to a rotor having magnetic poles displaced in phase by  $360^\circ/N$  from one another.

10 [7] A claw pole motor stator according to claim 2, wherein first one and  $2m+1$ -th one of the teeth have projections of the same length extending axially along an outer peripheral surface of a rotor.

[8] A claw pole motor stator according to claim 1 or 2, wherein  
15 said stator includes a cooling structure.

[9] A claw pole motor stator according to claim 8, wherein said cooling structure is provided in at least one of the inside and the peripheral portion of the stator.

[10] A claw pole motor stator according to claim 9, wherein said  
20 cooling structure provided in the peripheral portion of said stator comprises at least one recess, at least one protrusion or a plurality of cooling fins.

[11] A claw pole motor stator according to claim 9, wherein said cooling structure provided in the inside of said stator has at

least one cooling space.

[12] A claw pole motor stator according to claim 11, wherein said cooling space is formed by cooperation of the stator and a holder for said stator with each other.

5 [13] A claw pole motor stator according to claim 11, wherein said cooling space is formed by cooperation of the stator, a holder for said stator, and a reinforcing ring interposed between the stator and the holder.

[14] A claw pole motor stator according to claim 8, wherein said  
10 cooling structure cools the stator by at least one of cooling water and cooling air.